

AMENDMENTS TO THE CLAIMS

Please amend claims 13-14, 16-17 and 20-22.

Pursuant to 37 C.F.R. § 1.121 the following listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of the Claims:

Claims 1-11 (Canceled)

Claim 12 (Previously Presented): A method for treating a crystal having nonlinear optical properties and including foreign atoms which bring about specific absorption of incoming light, the method comprising:

converting the foreign atoms in the crystal to a lower valency state by oxidation, thereby liberating electrons;

removing the liberated electrons from the crystal using an external current source during the oxidation.

Claim 13 (Currently Amended): The method as recited in Claim [[1]] 12, wherein the crystal comprises one of the following: a lithium niobate crystal and a lithium tantalite crystal.

Claim 14 (Currently Amended): The method as recited in Claim [[1]] 12, wherein the foreign atoms comprise doping elements provided to the crystal by doping prior to the oxidation.

Claim 15 (Previously Presented): The method as recited in Claim 14, wherein the doping elements comprise at least one of the following extrinsic ions: iron ions, copper ions, and manganese ions, the extrinsic ions existing in a concentration of more than $1 \times 10^{25} \text{ m}^{-3}$, and said extrinsic ions increasing the dark conductivity of the crystal.

Claim 16 (Currently Amended): The method as recited in Claim [[1]] 12, wherein the lower valency state comprises 3+.

Claim 17 (Currently Amended): The method as recited in Claim [[1]] 12, further comprising:

placing the crystal between a plurality of electrodes, which are connected to a voltage source; and

applying between the plurality of electrodes a voltage substantially between 1 V and 1200 V.

Claim 18 (Previously Presented): The method as recited in Claim 17, wherein one of the electrodes comprises a corona electrode which is not in contact with the crystal, the corona electrode, being connected to a negative terminal of the voltage source.

Claim 19 (Previously Presented): The method as recited in Claim 17, wherein the voltage is:

substantially 1000 V if one of the plurality of electrodes comprises a corona electrode which is not in contact with the crystal; and
substantially 10 V if the plurality of electrodes are contacting the crystal.

Claim 20 (Currently Amended): The method as recited in Claim [[1]] 12, wherein the external current source generates a current in the crystal substantially between 0.01 mA and 15 mA.

Claim 21 (Currently Amended): The method as recited in Claim [[1]] 12, wherein the oxidation produces a crystal temperature substantially between 300 °C and 1200 °C.

Claim 22 (Currently Amended): A nonlinear optical component including foreign atoms and produced according to the process of Claim [[1]] 12, wherein the component has a residual absorption of less than 0.4 mm⁻¹.